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| 10/527,434 | 03/10/2005 | Franz Atzinger | 2002P11067WOUS | 5412 |

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| EXAMINER | |
|---|---|
| SUCHECKI, KRYSTYNA | |
| **ART UNIT** | **PAPER NUMBER** |
| 2882 | |

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/527,434 | ATZINGER ET AL. | |
| | Examiner | Art Unit | |
| | Krystyna Suchecki | 2882 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *10 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *13-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Specification*

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The specification does not provide antecedence for Claims 17 and 19 for making a combined image using imaging positions that do not overlap by using a border area of the images.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 13-15, 20-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (US 6,282,264) in view of Sakaguchi (US 6,222,906).

Regarding Claims 13-15, 20, 24-29, Smith teaches a medical imaging device comprising a radiation source (Column 12, lines 51-64), a digital radiation detector for recording images (Column 12, line 51- Column 13, line 20), the radiation source and the digital radiation detector configured to be moved vertically relative to a patient in a standing position (Figure 49); a control device adapted to move the radiation source and the digital radiation detector to a plurality of successive imaging positions (Column 16, lines 43-65) for recording an image of an examination area having a height exceeding a height of an active surface area of the digital radiation detector (Column 10, lines 41-

53); and an image processing device for generating a combined image (Column 11, lines 2-6) showing the examination area, wherein the plurality of successive imaging positions are calculated by the control device based on user input data providing the height of the examination area, an image is recorded at each imaging position, the images recorded at the imaging positions in the entirety covering the examination area, and the imaging processing device is configured to generate the combined image using the images recorded at the imaging positions (Column 10, line 41- Column 11, line 18; column 19, lines 13-58). The control device is adapted to move the radiation source and the digital radiation detector synchronously, and to imaging positions successively using an automation program (Id.). The combined image can be displayed on a monitor or printed on a hardcopy (Column 13, line 45- Column 14, line 21). The radiation source and detector are arranged on adjustable wall-or floor-mounted supports, including telescopic supports (Column 6, line 49- Column 7, line 8; Figures 28, 53, 61). Smith provides a platform for accommodating the patient, the platform having a safeguard device for securing the patient's standing position, cluding a handhold (Column 17, line 62- Column 18, line 15). A plate, permeable to radiation emitted by the source, is arranged on the platform and faces the digital radiation detector (Column 18, lines 16-39; Column 14, lines 27-33). The user input data includes the geometric data, including the height, of the examination area (Column 10, lines 41-53).

Smith does not expressly teach that the plurality of successive imaging positions are calculated by the control device based additionally on user input data providing the height of the active surface area of the digital radiation detector.

However, Sakaguchi teaches an imaging device comprising a digital radiation detector wherein the height of the active surface area of the digital radiation detector may be selected so as to correspond to the reading region (Column 27, lines 30-65) and also so that the resolution of the image may be selected based upon the examination region (Column 6, lines 16-46; Particulars of Figures 28 and 29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the height input feature of Sakaguchi in the device of Smith for the benefit of selecting a reading region and for tailoring the resolution of an image (Sakaguchi, Column 27, lines 30-65; Column 6, lines 16-46; Particulars of Figures 28 and 29). The addition of selectivity in the detector height to the device of Smith would enhance the ability of Smith to detect fine details and would compliment and enhance the magnification and distance features of Smith by tailoring the resolution on the detector to match the desired resolution in a display monitor, (Smith, Column 13, line 45- Column 14, line 21). The combination is especially advantageous since Smith is aware of pixel sizes (Smith, Column 13, line 45- Column 14, line 21), and Sakaguchi allows for tailoring of the pixel sizes (Sakaguchi, Column 19, line 40- Column 22, line 51).

Regarding Claims 21-23, Smith in view of Sakaguchi teaches a digital image as above for claims 13 and 20. Smith additionally teaches the flexibility to scale an image (Column 13, line 45- Column 14, line 21) and also teaches that customary window

controls are present on a display, including magnification, zoom, cropping, annotation, etc. (Column 6, lines 15-26).

Smith and Sakaguchi fail to expressly teach a scaled down image or a display format corresponding to a recording format of a combined image, the combined image movable on the monitor using a scrolling function. The display format is not expressly exceeding the original size of the examination area.

However, zoom functions typically allow scaling in both 'up' and 'down', so that the image would be scaled up or down as the zoom is utilized. This allows an image on the screen to exceed the original size of an examination area, and for the image to be smaller than the original size of the examination area. A benefit of a computer assisted zoom is that the resolution can be adjusted to maintain a clear image. This resolution adjustment is not available in printed hardcopy, which is "zoomed" by use of a magnifying glass or other optical manipulation. Scaling also allows for a complete, on screen, image of a patient that is compact in size, and that can be manipulated to magnify small areas for detailed study. Zooming and cropping also typically includes a scrolling function, so that a precise area can be viewed on the screen. The zoom and crop features typically allow an operator a "drag and drop" scrolling function to adjust the image on the screen. This scrolling function allows the image to be moved with selectivity as to the examined area. This avoids situations where hardcopy images are affixed to a wall or other object, and the examiner of the images must move about the image, craning the neck or otherwise physically manipulating the affixing means to view the image. When combined with the above scaling, the system benefits from the

maneuverability of print, with enhanced image clarity through the adjustment of image resolution.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the zoom and cropping functions of Smith for scaling the image up or down, to include display formats exceeding the original size of the examination region and to include scaled down images, in order to benefit from the maneuverability of print, with enhanced image clarity through the adjustment of image resolution. The digital scaling avoids affixing printed hardcopies to walls or other objects to assemble a complete view and eliminates the needs for magnifying glasses or other optical manipulations. Including a scrolling function would allow the examination area to be moved compactly on screen, and would avoid physical exertion by the image examiner.

Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith and Sakaguchi as applied to claim 13 above, and further in view of Lobregt (US 6,097,833).

Regarding Claims 16-19, Smith and Sakaguchi teach the device as above for claim 13, including the formation of a composite image (Smith, Column 11, lines 2-6).

Smith and Sakaguchi fail to discuss whether images recorded at adjacent imaging positions overlap in an overlap area, or are recorded at adjacent imaging positions that do not overlap, or wherein the imaging processing device is adapted to arrange the images recorded at the adjacent imaging positions relative to the combined

image using the overlap area or where the imaging processing device if adapted to arrange the images recorded at the adjacent imaging positions relative to the combined image using a border area of the images.

Lobregt teaches that it was known in the art to use a border area of images to arrange images recorded at adjacent imaging positions relative to a combined image to create images that do not overlap in order to image a limb of interest using a series of images assembled into a single image for display (Column 1, lines 24-53). Lobregt also teaches an alternative that uses images that overlap in an overlap area, and using the overlap area to create a combined image. This second alternative not only makes a single image for display, but also, by using the overlap, avoids harsh transitions that obscure lesions (Column 3, lines 9-53) and merges the overlap areas to comparatively removes artifacts (Column 6, lines 21-36).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use one of the overlap or non-overlap embodiments of Lobregt for the device of Smith and Sakaguchi in order to form a single image for display from multiple images of a limb. The non-overlapping embodiment it an art recognized alternative means of processing to form a single image, and the overlapping embodiment is an alternative that offers merging to comparatively remove artifacts and avoid harsh transitions that obscure lesions (Lobregt, Column 1, lines 24-25; Column 3, lines 9-53; Column 6, lines 21-36).

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith and Sakaguchi as applied to claim 13 above, and further in view of Shinoda (US 5,631,942).

Regarding claim 30, Smith in view of Shinoda teaches the device as above for claim 13 and further includes tracking sensors and manual positioning means that allow the system to track the location of manually placed system components (Smith, Column 16, lines 42-65). An operator can select sequential operation, or can select an initial detector location with subsequent computer control (Column 10, lines 41-53).

Smith fails to teach that user input data is provided by movement of the radiation detector to a first position and to a second position to define a first and last image of the plurality of successive images.

Shinoda teaches a device for successive imaging where system components such as a table or source are moved to first and final imaging positions in order to define first and second imaging positions to a controller of the system (Column 5, lines 35-61). The input method can be adapted to any image acquisition performed in steps (Column 8, lines 27-34) and allows the advantage that patients of varying sizes can be accommodated because of the flexibility of inputting starting and stopping locations (Column 3, lines 48-54). After defining the first and last image locations, the system is able to determine optimal intervening imaging locations for the type of imaging desired, and automated imaging can ensue (Column 5, line 35- Column 6, line 21).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to compliment the system of Smith and Sakaguchi with the

input system of Shinoda in order to enhance the capabilities of the tracking and manual location features of the detector of Smith. Smith moves a detector to an initial starting point, and by additionally inputting a last image point by moving the detector to a last point, as taught by Shinoda, Smith can accommodate patients of varying size while having optimal intervening imaging locations (Shinoda, Column 5, line 35- Column 6, line 21; Column 3, lines 48-54).

***Response to Arguments***

Applicant's arguments, see Response, filed 03/10/06, with respect to the rejection(s) of claim(s) 13 under Mazess have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of at least Smith and Sakaguchi, as set forth above. The claim, as amended, is not taught by Mazess.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krystyna Suchecki whose telephone number is (571) 272-2495. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER